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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/021,660	12/06/2001	Richard Murray	018501-000711US	5788

20350 7590 10/20/2003

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EXAMINER	
NICKOL, GARY B	
ART UNIT	**PAPER NUMBER**
1642	8

DATE MAILED: 10/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/021,660	MURRAY ET AL.	
	Examiner	Art Unit	
	Gary B. Nickol Ph.D.	1642	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 July 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☒ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

The response filed on July 25, 2003 (Paper No. 7) to the restriction requirement of March 25, 2003 has been received. Applicant has elected Group I, drawn to detecting SEQ ID NO:41, which encompasses claims 1-11. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP 818.03(a).

Claims 12-29 were cancelled.

Thus, claims 1-11 are pending and are currently under examination.

Oath/Declaration

The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

The signature of Richard Murray is not dated.

Priority

A review of the parent applications did not lend support for disclosure of SEQ ID NO:41. If applicant disagrees with any rejection of claims 1-11 set forth in this office action based on examiner's establishment of a priority date of **February 14, 2001** for the instant claims

in application serial number 10/021,660 applicant is invited to submit evidence pointing to the serial number, page and line where support can be found establishing an earlier priority date.

Specification

The specification is objected to because it contains multiple embedded hyperlinks and/or other forms of browser-executable codes (i.e., see pages 6, 21, 30). See MPEP §608.01. Examples of a hyperlink or a browser-executable code are a URL placed between these symbols "< >" and http:// followed by a URL address. Merely deleting said symbols and " **http://** " would obviate this objection. Patent publications of website addresses are permitted, but direct linkage to said sites must be disabled since USPTO policy does not permit the USPTO to link to any commercial sites since the USPTO exercises no control over the organization, views or accuracy of the information contained on these outside sites.

Claim Objections

Claim 1 is objected to for reciting "A method of detecting angiogenesis-associated transcript" which is grammatically unclear. This objection can be obviated by amending the claim to read: "A method of detecting an angiogenesis-associated transcript".

Claim 1 is further unclear for reciting "that selectively hybridized" because it appears that the claim is written in the past tense. This objection can be obviated by amending the claim to recite "that selectively hybridizes"

Claim 6 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Both claims are limited to the same

sequence as shown in Table 1. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-11 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims are drawn to a method comprising contacting a polynucleotide that selectively hybridizes to a sequence at least 80% identical to SEQ ID NO:41. The claims do not require that the sequence posses any particular biological activity, nor any particular conserved structure, or other disclosed distinguishing feature. Thus, the claims are drawn to a genus of polynucleotides that is defined only by sequence identity.

To provide adequate written description and evidence of possession of a claimed genus, the specification must provide sufficient distinguishing identifying characteristics of the genus. The factors to be considered include disclosure of complete or partial structure, physical and/or chemical properties, functional characteristics, structure/function correlation, methods of making

the claimed product, or any combination thereof. In this case, the only factor present in the claim is a partial structure in the form of a recitation of percent identity. Further, there is no identification of any particular portion of the structure that must be conserved. Accordingly, in the absence of sufficient recitation of distinguishing identifying characteristics, the specification does not provide adequate written description of the claimed genus.

Vas-Cath Inc. v. Mahurkar, 19USPQ2d 1111, clearly states "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession *of the invention*. The invention is, for purposes of the 'written description' inquiry, *whatever is now claimed.*" (See page 1117.) The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." (See *Vas-Cath* at page 1116). As discussed above, the skilled artisan cannot envision the detailed chemical structure of the encompassed genus of polypeptides, and therefore conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method of isolation. Adequate written description requires more than a mere statement that it is part of the invention and reference to a potential method of isolating it. The compound itself is required. See *Fiers v. Revel*, 25 USPQ2d 1601 at 1606 (CAFC 1993) and *Amgen Inc. v. Chugai Pharmaceutical Co. Ltd.*, 18 USPQ2d 1016.

One cannot describe what one has not conceived. See *Fiddes v. Baird*, 30 USPQ2d 1481 at 1483. In *Fiddes*, claims directed to mammalian FGF's were found to be unpatentable due to lack of written description for that broad class. The specification provided only the bovine sequence.

Therefore, only a method comprising contacting a biological sample from the patient with a polynucleotide that selectively hybridizes to SEQ ID NO:41, but not the full breadth of the claim meets the written description provision of 35 U.S.C. §112, first paragraph. Applicant is reminded that *Vas-Cath* makes clear that the written description provision of 35 U.S.C. §112 is severable from its enablement provision (see page 1115).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Au-Young *et al.* (US Patent No. 6,500,938; January 30, 1998).

Au-Young *et al.* teach and claim a plurality of polynucleotide probes that can be used as array elements in a microarray wherein *each* probe comprises at least a portion of a gene coding for a signaling pathway polypetide (SPP) (column 4, lines 1-10). The patent further teaches that these portions can also mean the whole coding sequence of a gene (column 3, lines 41+). The patent further teaches that the microarray is particularly useful for diagnosing cancers (column 12, lines 4+). One of these polynucleotide probes is 100% identical to SEQ ID NO:41 (see

attached sequence comparison) wherein said polynucleotide is inherently associated with angiogenesis.

The patent teaches that at least ONE of these probes is hybridized to a target polynucleotide forming at least ONE complex forming an expression profile wherein "**a** complex is detected by incorporating at least *one* labeling moiety in the complex" and wherein said profile provides a snapshot characteristic of a disease or a condition (column 11, lines 15-35). Hence, the teachings of the patent anticipate detecting a transcript in a cell of a patient comprising contacting a biological sample from the patient with a polynucleotide that selectively hybridized to SEQ ID NO:41. And, since the patent teaches that the probe can be the full-length gene, the hybridization complex would include a sequence that is *at least 80%* identical to SEQ ID NO:41. The patent further teaches that the biological sample is a tissue sample (column 8, line 9); and comprises isolated nucleic acids that can be mRNA (column 8, lines 10, and 20+). The patent further teaches amplifying nucleic acids before the step of contacting the biological sample with the polynucleotide (column 8, lines 26-44). The patent further teaches that the polynucleotide is labeled (column 8, lines 65+) including labeling with a fluorescent label (column 9, line 8) and or immobilized on a solid support (column 7, line 19). The patent further teaches that the invention can be used to monitor the progress of disease or the efficacy of a treatment which reads on use of the claimed method when the patient is undergoing a therapeutic regimen to treat a disease. Since the diseases include many different types of cancer, and since angiogenesis is known to be associated with cancer, the limitation of claims 10 and 11 are also anticipated.

Claims 1, and 3-7 are rejected under 35 U.S.C. 102(e) as being anticipated by Ekman *et al.* (US 2002/0173481, June 25, 1998).

Ekman *et al.* teach a method of diagnosing a disease associated with Bmx dysfunction comprising assaying the Bmx gene (100% identity to SEQ ID NO:41-see attached sequence comparison) using assays known in the art for detecting mutations or gene defects or abnormalities such as restriction digest, PCR assays, nucleic acid sequencing, Southern or Northern blotting, hybridization of labeled oligonucleotides to the gene or any suitable commercial kit (page 3, bottom of column 2 to top of column 3 and claim 22, page 14). Inherently, such assays would include biological samples comprising isolated nucleic acids wherein the nucleic acids are mRNA (Claims 2-3) since Northern blotting is a standard method for the detection and quantitation of mRNA levels. Further, such assays would include the step of amplifying nucleic acids before the step of contacting the biological sample (Claim 4) since PCR assays encompass the amplification of nucleic acids. Thus, clearly, the above teachings encompass detecting SEQ ID NO:41 from a patient by hybridization to a sequence which is at least 80% identical to SEQ ID NO:41.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-7 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Kaukonen *et al.* (British Jnl. Haematology, 1996, Vol. 94, pages 455-460) as further evidenced by Padro *et al.* (Blood, April 2000,Vol. 95(8), abstract)

Kaukonen *et al.* teach a method of detecting a transcript in a cell of a patient comprising contacting a biological sample from the patient with a polynucleotide that selectively hybridizes

to the BMX gene. As set forth above, the BMX gene is 100% identical to SEQ ID NO:41. Thus, absent evidence to the contrary, the BMX sequence assayed by Kaukonen *et al.* is 80% identical to SEQ ID NO:41 and would inherently have the feature of being associated with angiogenesis. Kaukonen *et al.* further teach that said biological sample is a tissue sample (i.e. bone marrow and peripheral blood samples- page 456) wherein the biological sample comprises isolated nucleic acids, and or labeled polynucleotides (page 457), mRNA (page 457), and wherein the assay includes amplifying nucleic acids before the step of contacting the biological sample with the polynucleotide- i.e. RT-PCR- page 458. Furthermore, Kaukonen *et al.* teaches that samples positive for BMX expression included patients with hematological malignancies such as AML. Inherently, such patients would be undergoing a therapeutic regimen to treat their disease. Furthermore, as evidenced by Padro *et al.*, AML is a disease associated with angiogenesis.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaukonen *et al.* (British Jnl. Haematology, 1996, Vol. 94, pages 455-460) as further evidenced by Padro *et al.* (Blood, April 2000,Vol. 95(8), abstract) in further view of the general teachings as set forth by Au-Young *et al.* (US Patent No. 6,500,938; January 30, 1998).

1. The teachings of Kaukonen *et al.* (British Jnl. Haematology, 1996, Vol. 94, pages 455-460) as further evidenced by Padro *et al.* (Blood, April 2000,Vol. 95(8), abstract) are set forth above as applied to Claims 1-7 and 10.
2. Kaukonen *et al.* do not specifically teach wherein the polynucleotide is labeled by a fluorescent label (Claim 8); or, alternatively, wherein the polynucleotide is immobilized on a solid surface (Claim 9). Also, Kaukonen *et al.* does not specifically teach the method of Claim 1 wherein the patient is suspected of having cancer (Claim 11).
3. Au-Young *et al.* (US Patent No. 6,500,938; January 30, 1998) teach the various art-recognized methodologies of assaying polynucleotides including immobilization on a solid surface (column 7, lines 19+) and that target polynucleotides can also be labeled with one or more labeling moieties to allow for detection of hybridized probe/target polynucleotide complexes including the use of fluorescent markers (column 9, lines 1-10).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to modulate the method of Kaukonen *et al.* so as to include different labeling moieties for the assayed polynucleotides such as fluorescent labels or to assay the

polynucleotide when it is immobilized on a solid surface because Au-Young *et al.* (US Patent No. 6,500,938; January 30, 1998) teach methods of assaying target polynucleotides including immobilization on a solid surface (column 7, lines 19+) and that target polynucleotides can also be labeled with one or more labeling moieties to allow for detection of hybridized probe/target. One would have been motivated to do so because these methods are well-known in the art and would have provided one of ordinary skill in the art a reasonable expectation of success. Further, it would have been *prima facie* obvious to modulate the methods of Kaukonen *et al.* to include detecting the BMX (SEQ ID NO:41) transcript in a cell of a patient wherein the patient is suspected of having cancer because Kaukonen *et al.* successfully teach detection of BMX in all samples of patients with acute myeloid leukemia (10/10) and chronic myeloid leukemia (4/4) (abstract, and Table 1, page 458). Hence, one of ordinary skill in the art would be motivated to assay for the presence of BMX in a patient suspected of having a cancer like AML or CML to aid in the diagnosis of such cancers wherein there would exist a reasonable expectation of success of detecting BMX in said patients since Kaukonen *et al.* successfully teaches the expression of BMX in patients with said cancers.

Claims 1-9 are further rejected under 35 U.S.C. 103(a) as being unpatentable over Ekman *et al.* (US 2002/0173481, June 25, 1998) and the general teachings as set forth by Au-Young *et al.* (US Patent No. 6,500,938; January 30, 1998).

1. Ekman *et al.* teach as set forth above as applied to claims 1, and 3-7.

2. Ekman *et al.* do not specifically teach wherein the biological sample is a tissue sample (Claim 2); wherein the polynucleotide is labeled by a fluorescent label (Claim 8); or, alternatively, wherein the polynucleotide is immobilized on a solid surface (Claim 9).
3. Au-Young *et al.* (US Patent No. 6,500,938; January 30, 1998) teach the various art-recognized methodologies of assaying polynucleotides including immobilization on a solid surface (column 7, lines 19+) and that target polynucleotides can also be labeled with one or more labeling moieties to allow for detection of hybridized probe/target polynucleotide complexes including the use of fluorescent markers (column 9, lines 1-10). The patent further suggests that the samples containing polynucleotides can be from any sample including those obtained from bodily fluids, cultured cells, biopsies, or other tissue preparations (column 8, lines 5+).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to modulate the method of Ekman *et al.* so as to include different labeling moieties for the assayed polynucleotides such as fluorescent labels or to assay the polynucleotide when it is immobilized on a solid surface because Au-Young *et al.* (US Patent No. 6,500,938; January 30, 1998) teach methods of assaying target polynucleotides including immobilization on a solid surface (column 7, lines 19+) and that target polynucleotides can also be labeled with one or more labeling moieties to allow for detection of hybridized probe/target. It would have been further obvious to one of ordinary skill in the art to include biological samples derived from a tissue sample because tissue samples merely represent one of the many sources that comprise polynucleotides as taught by Au-Young *et al.* Further, one would have been motivated to include

such limitations because all of these steps are well-known in the art and would have provided one of ordinary skill in the art a reasonable expectation of success.

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary B. Nickol Ph.D. whose telephone number is 703-305-7143. The examiner can normally be reached on M-F, 8:30-5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Caputa can be reached on 703-308-3995. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3014 for regular communications and 703-308-4242 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.

Gary B. Nickol, Ph.D.
Examiner
Art Unit 1642

GBN
October 17, 2003

GenCore version 5.1.6

OM nucleic - nucleic search, using sw model

Run on: August 20, 2003, 12:31:17 ; Search time 165 Seconds
(without alignments)
6569.921 Million cell updates/sec

Title: US-10-021-660-41
Perfect score: 2456
Sequence: 1 gcaagcacggaacaagctga.....aatgtggaaaaaaaaaaccg 2456

Scoring table: IDENTITY_NUC
Gapop 10.0 , Gapext 1.0

Searched: 569978 seqs, 220691566 residues

Total number of hits satisfying chosen parameters: 1139956

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Listing first 45 summaries

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6: /cgn2_6/ptodata/1/ina/backfiles1.seq:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

	Result No.	Score	% Query Match	Length	DB	ID	Description
	1	2456	100.0	2456	4	US-09-016-434-1476	Sequence 1476, Ap
	2	2397.6	97.6	2500	4	US-08-426-509A-3	Sequence 3, Appli
	3	2397.6	97.6	2500	4	US-08-232-545-3	Sequence 3, Appli
	4	2397.6	97.6	2500	5	PCT-US95-05008-3	Sequence 3, Appli
	5	493	20.1	2505	1	US-08-391-615-1	Sequence 1, Appli
	6	439.4	17.9	2574	3	US-09-142-529-2	Sequence 2, Appli
	7	439.4	17.9	2574	4	US-10-045-428A-2	Sequence 2, Appli
	8	220.2	9.0	3623	1	US-08-306-691B-35	Sequence 35, Appl
	9	211.6	8.6	2647	4	US-09-220-132-77	Sequence 77, Appl
	10	211.6	8.6	2647	5	PCT-US93-06251-77	Sequence 77, Appl
	11	207.6	8.5	1418	1	US-08-391-615-7	Sequence 7, Appli
	12	207.6	8.5	1611	1	US-07-820-011A-3	Sequence 3, Appli
	13	207.6	8.5	1611	5	PCT-US93-00445-3	Sequence 3, Appli
	14	204	8.3	1602	1	US-07-820-011A-1	Sequence 1, Appli
	15	204	8.3	1602	5	PCT-US93-00445-1	Sequence 1, Appli
	16	176.4	7.2	1491	2	US-09-006-675-1	Sequence 1, Appli
	17	176.4	7.2	1491	3	US-09-228-603A-1	Sequence 1, Appli
	18	173.6	7.1	1548	4	US-09-099-053-1	Sequence 1, Appli
	19	171	7.0	1467	4	US-09-579-182-2	Sequence 2, Appli
	20	168.2	6.8	780	2	US-09-006-675-7	Sequence 7, Appli
	21	168.2	6.8	780	3	US-09-228-603A-7	Sequence 7, Appli
	22	168	6.8	2770	4	US-08-426-509A-5	Sequence 5, Appli
	23	168	6.8	2770	4	US-08-232-545-5	Sequence 5, Appli
	24	168	6.8	2770	5	PCT-US95-05008-5	Sequence 5, Appli
c	25	168	6.8	7607	1	US-08-222-616-19	Sequence 19, Appl
c	26	168	6.8	7607	4	US-08-446-648-19	Sequence 19, Appl
c	27	168	6.8	7607	5	PCT-US95-04228-19	Sequence 19, Appl
	28	166.4	6.8	2827	4	US-08-492-723-1	Sequence 1, Appli
	29	158	6.4	268	1	US-08-700-575-18	Sequence 18, Appl
	30	153	6.2	4517	5	PCT-US93-06251-83	Sequence 83, Appl
	31	145	5.9	238	1	US-08-700-575-7	Sequence 7, Appli
	32	142.6	5.8	2674	4	US-09-817-180-1	Sequence 1, Appli
	33	137.6	5.6	1804	1	US-08-306-691B-40	Sequence 40, Appl
	34	137.6	5.6	1804	4	US-09-167-322-14	Sequence 14, Appl
	35	137.6	5.6	1804	5	PCT-US93-06251-82	Sequence 82, Appl
	36	136.2	5.5	1574	3	US-09-173-581-12	Sequence 12, Appl
	37	136.2	5.5	1574	3	US-09-420-915-12	Sequence 12, Appl
	38	134	5.5	159	1	US-08-456-647B-15	Sequence 15, Appl
	39	134	5.5	159	2	US-08-237-401A-15	Sequence 15, Appl
	40	120	4.9	2129	4	US-09-016-434-1452	Sequence 1452, Ap
	41	118	4.8	3416	2	US-08-357-642A-2	Sequence 2, Appli
	42	118	4.8	3416	2	US-08-460-626-2	Sequence 2, Appli
	43	118	4.8	3416	4	US-09-016-434-1483	Sequence 1483, Ap
	44	118	4.8	4089	4	US-09-300-958A-13	Sequence 13, Appl
	45	107.2	4.4	1398	2	US-08-604-989A-9	Sequence 9, Appli

ALIGNMENTS

RESULT 1
US-09-016-434-1476
; Sequence 1476, Application US/09016434
; Patent No. 6500938
; GENERAL INFORMATION:
; APPLICANT: Janice Au-Young
; APPLICANT: Jeffrey J. Seilhamer
; TITLE OF INVENTION: COMPOSITION FOR THE DETECTION OF SIGNALING
; TITLE OF INVENTION: PATHWAY GENE EXPRESSION
; NUMBER OF SEQUENCES: 1490
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: INCYTE PHARMACEUTICALS, INC.
; STREET: 3174 PORTER DRIVE
; CITY: PALO ALTO
; STATE: CALIFORNIA
; COUNTRY: USA
; ZIP: 94304
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Word Perfect 6.1 for Windows/MS-DOS 6.2
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/016,434
; FILING DATE: HEREWITH
; CLASSIFICATION:
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER:
; FILING DATE:
; CLASSIFICATION:
; ATTORNEY/AGENT INFORMATION:
; NAME: Zeller, Karen J.
; REGISTRATION NUMBER: 37,071
; REFERENCE/DOCKET NUMBER: PA-0002 US
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (650) 855-0555
; TELEFAX: (650) 845-4166
; INFORMATION FOR SEQ ID NO: 1476:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 2456 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; IMMEDIATE SOURCE:
; LIBRARY: GENBANK
; CLONE: g951234
US-09-016-434-1476

Query Match 100.0%; Score 2456; DB 4; Length 2456;
Best Local Similarity 100.0%; Pred. No. 0;

Matches 2456; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy          1 GCAAGCACGGAACAAGCTGAGACGGATGATAATATGGATACAAAATCTATTCTAGAAGAA 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 GCAAGCACGGAACAAGCTGAGACGGATGATAATATGGATACAAAATCTATTCTAGAAGAA 60

Qy         61 CTTCTTCTCAAAAGATCACAGCAAAAGAAGAAAATGTCACCAAATAATTACAAAGAACGG 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 CTTCTTCTCAAAAGATCACAGCAAAAGAAGAAAATGTCACCAAATAATTACAAAGAACGG 120

Qy        121 CTTTTTGTTTTGACCAAAACAAACCTTTCCTACTATGAATATGACAAAATGAAAAGGGGC 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 CTTTTTGTTTTGACCAAAACAAACCTTTCCTACTATGAATATGACAAAATGAAAAGGGGC 180

Qy        181 AGCAGAAAAGGATCCATTGAAATTAAGAAAATCAGATGTGTGGAGAAAGTAAATCTCGAG 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 AGCAGAAAAGGATCCATTGAAATTAAGAAAATCAGATGTGTGGAGAAAGTAAATCTCGAG 240

Qy        241 GAGCAGACGCCTGTAGAGAGACAGTACCCATTTCAGATTGTCTATAAAGATGGGCTTCTC 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 GAGCAGACGCCTGTAGAGAGACAGTACCCATTTCAGATTGTCTATAAAGATGGGCTTCTC 300

          301 TATGTCTATGCATCAAATGAAGAGAGCCGAAGTCAGTGGTTGAAAGCATTACAAAAAGAG 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 TATGTCTATGCATCAAATGAAGAGAGCCGAAGTCAGTGGTTGAAAGCATTACAAAAAGAG 360

Qy        361 ATAAGGGGTAACCCCCACCTGCTGGTCAAGTACCATAGTGGGTTCTTCGTGGACGGGAAG 420
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        361 ATAAGGGGTAACCCCCACCTGCTGGTCAAGTACCATAGTGGGTTCTTCGTGGACGGGAAG 420

Qy        421 TTCCTGTGTTGCCAGCAGAGCTGTAAAGCAGCCCCAGGATGTACCCTCTGGGAAGCATAT 480
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        421 TTCCTGTGTTGCCAGCAGAGCTGTAAAGCAGCCCCAGGATGTACCCTCTGGGAAGCATAT 480

Qy        481 GCTAATCTGCATACTGCAGTCAATGAAGAGAAACACAGAGTTCCCACCTTCCCAGACAGA 540
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        481 GCTAATCTGCATACTGCAGTCAATGAAGAGAAACACAGAGTTCCCACCTTCCCAGACAGA 540

Qy        541 GTGCTGAAGATACCTCGGGCAGTTCCTGTTCTCAAAATGGATGCACCATCTTCAAGTACC 600
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        541 GTGCTGAAGATACCTCGGGCAGTTCCTGTTCTCAAAATGGATGCACCATCTTCAAGTACC 600

Qy        601 ACTCTAGCCCAATATGACAACGAATCAAAGAAAAACTATGGCTCCCAGCCACCATCTTCA 660
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        601 ACTCTAGCCCAATATGACAACGAATCAAAGAAAAACTATGGCTCCCAGCCACCATCTTCA 660

Qy        661 AGTACCAGTCTAGCGCAATATGACAGCAACTCAAAGAAAATCTATGGCTCCCAGCCAAAC 720
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        661 AGTACCAGTCTAGCGCAATATGACAGCAACTCAAAGAAAATCTATGGCTCCCAGCCAAAC 720

y         721 TTCAACATGCAGTATATTCCAAGGGAAGACTTCCCTGACTGGTGGCAAGTAAGAAAACTG 780
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        721 TTCAACATGCAGTATATTCCAAGGGAAGACTTCCCTGACTGGTGGCAAGTAAGAAAACTG 780

Qy        781 AAAAGTAGCAGCAGCAGTGAAGATGTTGCAAGCAGTAACCAAAAAGAAAGAAATGTGAAT 840
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        781 AAAAGTAGCAGCAGCAGTGAAGATGTTGCAAGCAGTAACCAAAAAGAAAGAAATGTGAAT 840

Qy        841 CACACCACCTCAAAGATTTCATGGGAATTCCCTGAGTCAAGTTCATCTGAAGAAGAGGAA 900
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        841 CACACCACCTCAAAGATTTCATGGGAATTCCCTGAGTCAAGTTCATCTGAAGAAGAGGAA 900

Qy        901 AACCTGGATGATTATGACTGGTTTGCTGGTAACATCTCCAGATCACAATCTGAACAGTTA 960
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        901 AACCTGGATGATTATGACTGGTTTGCTGGTAACATCTCCAGATCACAATCTGAACAGTTA 960

Qy        961 CTCAGACAAAAGGGAAAAGAAGGAGCATTTATGGTTAGAAATTCGAGCCAAGTGGGAATG 1020
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        961 CTCAGACAAAAGGGAAAAGAAGGAGCATTTATGGTTAGAAATTCGAGCCAAGTGGGAATG 1020

Qy       1021 TACACAGTGTCCTTATTTAGTAAGGCTGTGAATGATAAAAAAGGAACTGTCAAACATTAC 1080
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1021 TACACAGTGTCCTTATTTAGTAAGGCTGTGAATGATAAAAAAGGAACTGTCAAACATTAC 1080

Qy       1081 CACGTGCATACAAATGCTGAGAACAAATTATACCTGGCAGAAAACTACTGTTTTGATTCC 1140
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1081 CACGTGCATACAAATGCTGAGAACAAATTATACCTGGCAGAAAACTACTGTTTTGATTCC 1140

Qy       1141 ATTCCAAAGCTTATTCATTATCATCAACACAATTCAGCAGGCATGATCACACGGCTCCGC 1200
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1141 ATTCCAAAGCTTATTCATTATCATCAACACAATTCAGCAGGCATGATCACACGGCTCCGC 1200

Qy       1201 CACCCTGTGTCAACAAAGGCCAACAAGGTCCCCGACTCTGTGTCCCTGGGAAATGGAATC 1260
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1201 CACCCTGTGTCAACAAAGGCCAACAAGGTCCCCGACTCTGTGTCCCTGGGAAATGGAATC 1260

Qy       1261 TGGGAACTGAAAAGAGAAGAGATTACCTTGTTGAAGGAGCTGGGAAGTGGCCAGTTTGGA 1320
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1261 TGGGAACTGAAAAGAGAAGAGATTACCTTGTTGAAGGAGCTGGGAAGTGGCCAGTTTGGA 1320

Qy       1321 GTGGTCCAGCTGGGCAAGTGGAAGGGGCAGTATGATGTTGCTGTTAAGATGATCAAGGAG 1380
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1321 GTGGTCCAGCTGGGCAAGTGGAAGGGGCAGTATGATGTTGCTGTTAAGATGATCAAGGAG 1380

Qy       1381 GGCTCCATGTCAGAAGATGAATTCTTTCAGGAGGCCCAGACTATGATGAAACTCAGCCAT 1440
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1381 GGCTCCATGTCAGAAGATGAATTCTTTCAGGAGGCCCAGACTATGATGAAACTCAGCCAT 1440

Qy       1441 CCCAAGCTGGTTAAATTCTATGGAGTGTGTTCAAAGGAATACCCCATATACATAGTGACT 1500
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1441 CCCAAGCTGGTTAAATTCTATGGAGTGTGTTCAAAGGAATACCCCATATACATAGTGACT 1500

Qy       1501 GAATATATAAGCAATGGCTGCTTGCTGAATTACCTGAGGAGTCACGGAAAAGGACTTGAA 1560
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1501 GAATATATAAGCAATGGCTGCTTGCTGAATTACCTGAGGAGTCACGGAAAAGGACTTGAA 1560

Qy       1561 CCTTCCCAGCTCTTAGAAATGTGCTACGATGTCTGTGAAGGCATGGCCTTCTTGGAGAGT 1620
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1561 CCTTCCCAGCTCTTAGAAATGTGCTACGATGTCTGTGAAGGCATGGCCTTCTTGGAGAGT 1620

Qy       1621 CACCAATTCATACACCGGGACTTGGCTGCTCGTAACTGCTTGGTGGACAGAGATCTCTGT 1680
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1621 CACCAATTCATACACCGGGACTTGGCTGCTCGTAACTGCTTGGTGGACAGAGATCTCTGT 1680

Qy       1681 GTGAAAGTATCTGACTTTGGAATGACAAGGTATGTTCTTGATGACCAGTATGTCAGTTCA 1740
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1681 GTGAAAGTATCTGACTTTGGAATGACAAGGTATGTTCTTGATGACCAGTATGTCAGTTCA 1740

Qy       1741 GTCGGAACAAAGTTTCCAGTCAAGTGGTCAGCTCCAGAGGTGTTTCATTACTTCAAATAC 1800
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1741 GTCGGAACAAAGTTTCCAGTCAAGTGGTCAGCTCCAGAGGTGTTTCATTACTTCAAATAC 1800

Qy       1801 AGCAGCAAGTCAGACGTATGGGCATTTGGGATCCTGATGTGGGAGGTGTTCAGCCTGGGG 1860
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1801 AGCAGCAAGTCAGACGTATGGGCATTTGGGATCCTGATGTGGGAGGTGTTCAGCCTGGGG 1860

Qy       1861 AAGCAGCCCTATGACTTGTATGACAACTCCCAGGTGGTTCTGAAGGTCTCCCAGGGCCAC 1920
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1861 AAGCAGCCCTATGACTTGTATGACAACTCCCAGGTGGTTCTGAAGGTCTCCCAGGGCCAC 1920

Qy       1921 AGGCTTTACCGGCCCCACCTGGCATCGGACACCATCTACCAGATCATGTACAGCTGCTGG 1980
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1921 AGGCTTTACCGGCCCCACCTGGCATCGGACACCATCTACCAGATCATGTACAGCTGCTGG 1980

Qy       1981 CACGAGCTTCCAGAAAAGCGTCCCACATTTCAGCAACTCCTGTCTTCCATTGAACCACTT 2040
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1981 CACGAGCTTCCAGAAAAGCGTCCCACATTTCAGCAACTCCTGTCTTCCATTGAACCACTT 2040

Qy       2041 CGGGAAAAAGACAAGCATTGAAGAAGAAATTAGGAGTGCTGATAAGAATGAATATAGATG 2100
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2041 CGGGAAAAAGACAAGCATTGAAGAAGAAATTAGGAGTGCTGATAAGAATGAATATAGATG 2100

Qy       2101 CTGGCCAGCATTTTCATTCATTTTAAGGAAAGTAGGAAGGCATAAGTAATTTTAGCTAGT 2160
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2101 CTGGCCAGCATTTTCATTCATTTTAAGGAAAGTAGGAAGGCATAAGTAATTTTAGCTAGT 2160
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Qy       2161 TTTTAATAGTGTTCTCTGTATTGTCTATTATTTAGAAATGAACAAGGCAGGAAACAAAAG 2220
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2161 TTTTAATAGTGTTCTCTGTATTGTCTATTATTTAGAAATGAACAAGGCAGGAAACAAAAG 2220

Qy       2221 ATTCCCTTGAAATTTAGATCAAATTAGTAATTTTGTTTTATGCTGCTCCTGATATAACAC 2280
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2221 ATTCCCTTGAAATTTAGATCAAATTAGTAATTTTGTTTTATGCTGCTCCTGATATAACAC 2280

Qy       2281 TTTCCAGCCTATAGCAGAAGCACATTTTCAGACTGCAATATAGAGACTGTGTTCATGTGT 2340
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2281 TTTCCAGCCTATAGCAGAAGCACATTTTCAGACTGCAATATAGAGACTGTGTTCATGTGT 2340

Qy       2341 AAAGACTGAGCAGAACTGAAAAATTACTTATTGGATATTCATTCTTTTCTTTATATTGTC 2400
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2341 AAAGACTGAGCAGAACTGAAAAATTACTTATTGGATATTCATTCTTTTCTTTATATTGTC 2400

Qy       2401 ATTGTCACAACAATTAAATATACTACCAAGTACAGAAATGTGGAAAAAAAAAACCG 2456
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Db       2401 ATTGTCACAACAATTAAATATACTACCAAGTACAGAAATGTGGAAAAAAAAAACCG 2456
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[redacted]SULT 2
US-08-426-509A-3
; Sequence 3, Application US/08426509A
; Patent No. 6326469
; GENERAL INFORMATION:
; APPLICANT: Ullrich,, Axel
; APPLICANT: Gishizsky,, Mikhail
; APPLICANT: Sures,, Irman G.
; TITLE OF INVENTION: NOVEL MEGAKARYOCYTIC PROTEIN
; TITLE OF INVENTION: TYROSINE KINASES
; NUMBER OF SEQUENCES: 21
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Pennie & Edmonds
; STREET: 1155 Avenue of the Americas
; CITY: New York,
; STATE: NY
; COUNTRY: USA
; ZIP: 10036-2711
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Diskette
; COMPUTER: IBM Compatible
; OPERATING SYSTEM: DOS
; SOFTWARE: FastSEQ Version 2.0
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/426,509A
; FILING DATE: 21-APR-1995
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 08/232,545
; FILING DATE:
; ATTORNEY/AGENT INFORMATION:
; NAME: Coruzzi, Laura A
; REGISTRATION NUMBER: 30,742
; REFERENCE/DOCKET NUMBER: 7683-0074-999
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 212-790-9090
; TELEFAX: 212-869-9741
; TELEX: 66141 PENNIE
; INFORMATION FOR SEQ ID NO: 3:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 2500 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: unknown
; TOPOLOGY: unknown
US-08-426-509A-3

Query Match 97.6%; Score 2397.6; DB 4; Length 2500;
Best Local Similarity 99.4%; Pred. No. 0;
Matches 2417; Conservative 0; Mismatches 14; Indels 1; Gaps 1;

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Qy         22 ACGGATGATAATATGGATACAAAATCTATTCTAGAAGAACTTCTTCTCAAAAGATCACAG 81
              | ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         70 AAGGATGATAATATGGATACAAAATCTATTCTAGAAGAACTTCTTCTCAAAAGATCACAG 129

Qy         82 CAAAAGAAGAAAATGTCACCAAATAATTACAAAGAACGGCTTTTTGTTTTGACCAAAACA 141
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        130 CAAAAGAAGAAAATGTCACCAAATAATTACAAAGAACGGCTTTTTGTTTTGACCAAAACA 189

Qy        142 AACCTTTCCTACTATGAATATGACAAAATGAAAAGGGGCAGCAGAAAAGGATCCATTGAA 201
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        190 AACCTTTCCTACTATGAATATGACAAAATGAAAAGGGGCAGCAGAAAAGGATCCATTGAA 249

Qy        202 ATTAAGAAAATCAGATGTGTGGAGAAAGTAAATCTCGAGGAGCAGACGCCTGTAGAGAGA 261
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        250 ATTAAGAAAATCAGATGTGTGGAGAAAGTAAATCTCGAGGAGCAGACGCCTGTAGAGAGA 309

Qy        262 CAGTACCCATTTCAGATTGTCTATAAAGATGGGCTTCTCTATGTCTATGCATCAAATGAA 321
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        310 CAGTACCCATTTCAGATTGTCTATAAAGATGGGCTTCTCTATGTCTATGCATCAAATGAA 369

Qy        322 GAGAGCCGAAGTCAGTGGTTGAAAGCATTACAAAAAGAGATAAGGGGTAACCCCCACCTG 381
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        370 GAGAGCCGAAGTCAGTGGTTGAAAGCATTACAAAAAGAGATAAGGGGTAACCCCCACCTG 429

Qy        382 CTGGTCAAGTACCATAGTGGGTTCTTCGTGGACGGGAAGTTCCTGTGTTGCCAGCAGAGC 441
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        430 CTGGTCAAGTACCATAGTGGGTTCTTCGTGGACGGGAAGTTCCTGTGTTGCCAGCAGAGC 489

Qy        442 TGTAAAGCAGCCCCAGGATGTACCCTCTGGGAAGCATATGCTAATCTGCATACTGCAGTC 501
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        490 TGTAAAGCAGCCCCAGGATGTACCCTCTGGGAAGCATATGCTAATCTGCATACTGCAGTC 549

Qy        502 AATGAAGAGAAACACAGAGTTCCCACCTTCCCAGACAGAGTGCTGAAGATACCTCGGGCA 561
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        550 AATGAAGAGAAACACAGAGTTCCCACCTTCCCAGACAGAGTGCTGAAGATACCTCGGGCA 609

Qy        562 GTTCCTGTTCTCAAAATGGATGCACCATCTTCAAGTACCACTCTAGCCCAATATGACAAC 621
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        610 GTTCCTGTTCTCAAAATGGATGCACCATCTTCAAGTACCACTCTAGCCCAATATGACAAC 669

Qy        622 GAATCAAAGAAAAACTATGGCTCCCAGCCACCATCTTCAAGTACCAGTCTAGCGCAATAT 681
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        670 GAATCAAAGAAAAACTATGGCTCCCAGCCACCATCTTCAAGTACCAGTCTAGCGCAATAT 729

Qy        682 GACAGCAACTCAAAGAAAATCTATGGCTCCCAGCCAAACTTCAACATGCAGTATATTCCA 741
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        730 GACAGCAACTCAAAGAAAATCTATGGCTCCCAGCCAAACTTCAACATGCAGTATATTCCA 789

Qy        742 AGGGAAGACTTCCCTGACTGGTGGCAAGTAAGAAAACTGAAAAGTAGCAGCAGCAGTGAA 801
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        790 AGGGAAGACTTCCCTGACTGGTGGCAAGTAAGAAAACTGAAAAGTAGCAGCAGCAGTGAA 849

Qy        802 GATGTTGCAAGCAGTAACCAAAAAGAAAGAAATGTGAATCACACCACCTCAAAGATTTCA 861
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        850 GATGTTGCAAGCAGTAACCAAAAAGAAAGAAATGTGAATCACACCACCTCAAAGATTTCA 909

Qy        862 TGGGAATTCCCTGAGTCAAGTTCATCTGAAGAAGAGGAAAACCTGGATGATTATGACTGG 921
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        910 TGGGAATTCCCTGAGTCAAGTTCATCTGAAGAAGAGGAAAACCTGGATGATTATGACTGG 969

Qy        922 TTTGCTGGTAACATCTCCAGATCACAATCTGAACAGTTACTCAGACAAAAGGGAAAAGAA 981
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        970 TTTGCTGGTAACATCTCCAGATCACAATCTGAACAGTTACTCAGACAAAAGGGAAAAGAA 1029

Qy        982 GGAGCATTTATGGTTAGAAATTCGAGCCAAGTGGGAATGTACACAGTGTCCTTATTTAGT 1041
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1030 GGAGCATTTATGGTTAGAAATTCGAGCCAAGTGGGAATGTACACAGTGTCCTTATTTAGT 1089

Qy       1042 AAGGCTGTGAATGATAAAAAAGGAACTGTCAAACATTACCACGTGCATACAAATGCTGAG 1101
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1090 AAGGCTGTGAATGATAAAAAAGGAACTGTCAAACATTACCACGTGCATACAAATGCTGAG 1149

Qy       1102 AACAAATTATACCTGGCAGAAAACTACTGTTTTGATTCCATTCCAAAGCTTATTCATTAT 1161
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1150 AACAAATTATACCTGGCAGAAAACTACTGTTTTGATTCCATTCCAAAGCTTATTCATTAT 1209
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Db      2281 TTTCCAGCCTATAGCAGAAGCACATTTTCAGACTGCAATATAGAGACTGTGTTCATGTGT 2340

Qy      2341 AAAGACTGAGCAGAACTGAAAAATTACTTATTGGATATTCATTCTTTTCTTTATATTGTC 2400
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      2341 AAAGACTGAGCAGAACTGAAAAATTACTTATTGGATATTCATTCTTTTCTTTATATTGTC 2400

Qy      2401 ATTGTCACAACAATTAAATATACTACCAAGTACAGAAATGTGGAAAAAAAAAACCG 2456
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      2401 ATTGTCACAACAATTAAATATACTACCAAGTACAGAAATGTGGAAAAAAAAAACCG 2456


RESULT 2
US-10-186-399-1
; Sequence 1, Application US/10186399
; Publication No. US20020173481A1
; GENERAL INFORMATION:
;  APPLICANT: Ekman, Niklas
;  APPLICANT:  Arighi, Elena
;  APPLICANT:  Vastrik, Imre
;  APPLICANT:  Tamagnone, Luca
   APPLICANT:  Alitalo, Kari
   TITLE OF INVENTION: REGULATION OF VASCULAR ENDOTHELIUM USING BMX TYROSINE
   TITLE OF INVENTION:  KINASE
;  FILE REFERENCE: 28113/31941A
;  CURRENT APPLICATION NUMBER: US/10/186,399
;  CURRENT FILING DATE:  2002-07-01
;  PRIOR APPLICATION NUMBER: US 08/320,432
;  PRIOR FILING DATE: 1994-10-07
;  NUMBER OF SEQ ID NOS: 5
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 1
;   LENGTH: 2456
;   TYPE: DNA
;   ORGANISM: Homo sapiens
US-10-186-399-1

  Query Match           100.0%;  Score 2456;  DB 13;  Length 2456;
  Best Local Similarity  100.0%;  Pred. No. 0;
  Matches 2456;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         1 GCAAGCACGGAACAAGCTGAGACGGATGATAATATGGATACAAAATCTATTCTAGAAGAA 60
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         1 GCAAGCACGGAACAAGCTGAGACGGATGATAATATGGATACAAAATCTATTCTAGAAGAA 60

Qy        61 CTTCTTCTCAAAAGATCACAGCAAAAGAAGAAAATGTCACCAAATAATTACAAAGAACGG 120
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        61 CTTCTTCTCAAAAGATCACAGCAAAAGAAGAAAATGTCACCAAATAATTACAAAGAACGG 120

Qy       121 CTTTTTGTTTTGACCAAAACAAACCTTTCCTACTATGAATATGACAAAATGAAAAGGGGC 180
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       121 CTTTTTGTTTTGACCAAAACAAACCTTTCCTACTATGAATATGACAAAATGAAAAGGGGC 180

Qy       181 AGCAGAAAAGGATCCATTGAAATTAAGAAAATCAGATGTGTGGAGAAAGTAAATCTCGAG 240
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       181 AGCAGAAAAGGATCCATTGAAATTAAGAAAATCAGATGTGTGGAGAAAGTAAATCTCGAG 240

Qy       241 GAGCAGACGCCTGTAGAGAGACAGTACCCATTTCAGATTGTCTATAAAGATGGGCTTCTC 300
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       241 GAGCAGACGCCTGTAGAGAGACAGTACCCATTTCAGATTGTCTATAAAGATGGGCTTCTC 300

Qy       301 TATGTCTATGCATCAAATGAAGAGAGCCGAAGTCAGTGGTTGAAAGCATTACAAAAAGAG 360
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Qy       361 ATAAGGGGTAACCCCCACCTGCTGGTCAAGTACCATAGTGGGTTCTTCGTGGACGGGAAG 420
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Qy       421 TTCCTGTGTTGCCAGCAGAGCTGTAAAGCAGCCCCAGGATGTACCCTCTGGGAAGCATAT 480
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Qy       481 GCTAATCTGCATACTGCAGTCAATGAAGAGAAACACAGAGTTCCCACCTTCCCAGACAGA 540
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Qy       541 GTGCTGAAGATACCTCGGGCAGTTCCTGTTCTCAAAATGGATGCACCATCTTCAAGTACC 600
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Db       541 GTGCTGAAGATACCTCGGGCAGTTCCTGTTCTCAAAATGGATGCACCATCTTCAAGTACC 600

Qy       601 ACTCTAGCCCAATATGACAACGAATCAAAGAAAAACTATGGCTCCCAGCCACCATCTTCA 660
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Qy       661 AGTACCAGTCTAGCGCAATATGACAGCAACTCAAAGAAAATCTATGGCTCCCAGCCAAAC 720
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Db       661 AGTACCAGTCTAGCGCAATATGACAGCAACTCAAAGAAAATCTATGGCTCCCAGCCAAAC 720

Qy       721 TTCAACATGCAGTATATTCCAAGGGAAGACTTCCCTGACTGGTGGCAAGTAAGAAAACTG 780
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Qy       781 AAAAGTAGCAGCAGCAGTGAAGATGTTGCAAGCAGTAACCAAAAAGAAAGAAATGTGAAT 840
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Qy       841 CACACCACCTCAAAGATTTCATGGGAATTCCCTGAGTCAAGTTCATCTGAAGAAGAGGAA 900
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Db       841 CACACCACCTCAAAGATTTCATGGGAATTCCCTGAGTCAAGTTCATCTGAAGAAGAGGAA 900

Qy       901 AACCTGGATGATTATGACTGGTTTGCTGGTAACATCTCCAGATCACAATCTGAACAGTTA 960
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Db       901 AACCTGGATGATTATGACTGGTTTGCTGGTAACATCTCCAGATCACAATCTGAACAGTTA 960

Qy       961 CTCAGACAAAAGGGAAAAGAAGGAGCATTTATGGTTAGAAATTCGAGCCAAGTGGGAATG 1020
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Db       961 CTCAGACAAAAGGGAAAAGAAGGAGCATTTATGGTTAGAAATTCGAGCCAAGTGGGAATG 1020

Qy      1021 TACACAGTGTCCTTATTTAGTAAGGCTGTGAATGATAAAAAAGGAACTGTCAAACATTAC 1080
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Db      1021 TACACAGTGTCCTTATTTAGTAAGGCTGTGAATGATAAAAAAGGAACTGTCAAACATTAC 1080

Qy      1081 CACGTGCATACAAATGCTGAGAACAAATTATACCTGGCAGAAAACTACTGTTTTGATTCC 1140
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Qy      1141 ATTCCAAAGCTTATTCATTATCATCAACACAATTCAGCAGGCATGATCACACGGCTCCGC 1200
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Qy      1201 CACCCTGTGTCAACAAAGGCCAACAAGGTCCCCGACTCTGTGTCCCTGGGAAATGGAATC 1260
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Db      1201 CACCCTGTGTCAACAAAGGCCAACAAGGTCCCCGACTCTGTGTCCCTGGGAAATGGAATC 1260

Qy      1261 TGGGAACTGAAAAGAGAAGAGATTACCTTGTTGAAGGAGCTGGGAAGTGGCCAGTTTGGA 1320
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Db      1261 TGGGAACTGAAAAGAGAAGAGATTACCTTGTTGAAGGAGCTGGGAAGTGGCCAGTTTGGA 1320

Qy      1321 GTGGTCCAGCTGGGCAAGTGGAAGGGGCAGTATGATGTTGCTGTTAAGATGATCAAGGAG 1380
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1321 GTGGTCCAGCTGGGCAAGTGGAAGGGGCAGTATGATGTTGCTGTTAAGATGATCAAGGAG 1380

Qy      1381 GGCTCCATGTCAGAAGATGAATTCTTTCAGGAGGCCCAGACTATGATGAAACTCAGCCAT 1440
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Db      1381 GGCTCCATGTCAGAAGATGAATTCTTTCAGGAGGCCCAGACTATGATGAAACTCAGCCAT 1440

Qy      1441 CCCAAGCTGGTTAAATTCTATGGAGTGTGTTCAAAGGAATACCCCATATACATAGTGACT 1500
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1441 CCCAAGCTGGTTAAATTCTATGGAGTGTGTTCAAAGGAATACCCCATATACATAGTGACT 1500

Qy      1501 GAATATATAAGCAATGGCTGCTTGCTGAATTACCTGAGGAGTCACGGAAAAGGACTTGAA 1560
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1501 GAATATATAAGCAATGGCTGCTTGCTGAATTACCTGAGGAGTCACGGAAAAGGACTTGAA 1560

Qy      1561 CCTTCCCAGCTCTTAGAAATGTGCTACGATGTCTGTGAAGGCATGGCCTTCTTGGAGAGT 1620
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Db       1561 CCTTCCCAGCTCTTAGAAATGTGCTACGATGTCTGTGAAGGCATGGCCTTCTTGGAGAGT 1620

Qy       1621 CACCAATTCATACACCGGGACTTGGCTGCTCGTAACTGCTTGGTGGACAGAGATCTCTGT 1680
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1621 CACCAATTCATACACCGGGACTTGGCTGCTCGTAACTGCTTGGTGGACAGAGATCTCTGT 1680

Qy       1681 GTGAAAGTATCTGACTTTGGAATGACAAGGTATGTTCTTGATGACCAGTATGTCAGTTCA 1740
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Qy       1741 GTCGGAACAAAGTTTCCAGTCAAGTGGTCAGCTCCAGAGGTGTTTCATTACTTCAAATAC 1800
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Db       1741 GTCGGAACAAAGTTTCCAGTCAAGTGGTCAGCTCCAGAGGTGTTTCATTACTTCAAATAC 1800

Qy       1801 AGCAGCAAGTCAGACGTATGGGCATTTGGGATCCTGATGTGGGAGGTGTTCAGCCTGGGG 1860
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Qy       1861 AAGCAGCCCTATGACTTGTATGACAACTCCCAGGTGGTTCTGAAGGTCTCCCAGGGCCAC 1920
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Db       1861 AAGCAGCCCTATGACTTGTATGACAACTCCCAGGTGGTTCTGAAGGTCTCCCAGGGCCAC 1920

Qy       1921 AGGCTTTACCGGCCCCACCTGGCATCGGACACCATCTACCAGATCATGTACAGCTGCTGG 1980
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1921 AGGCTTTACCGGCCCCACCTGGCATCGGACACCATCTACCAGATCATGTACAGCTGCTGG 1980

Qy       1981 CACGAGCTTCCAGAAAAGCGTCCCACATTTCAGCAACTCCTGTCTTCCATTGAACCACTT 2040
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Db       1981 CACGAGCTTCCAGAAAAGCGTCCCACATTTCAGCAACTCCTGTCTTCCATTGAACCACTT 2040

Qy       2041 CGGGAAAAAGACAAGCATTGAAGAAGAAATTAGGAGTGCTGATAAGAATGAATATAGATG 2100
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Db       2041 CGGGAAAAAGACAAGCATTGAAGAAGAAATTAGGAGTGCTGATAAGAATGAATATAGATG 2100

Qy       2101 CTGGCCAGCATTTTCATTCATTTTAAGGAAAGTAGGAAGGCATAAGTAATTTTAGCTAGT 2160
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Db       2101 CTGGCCAGCATTTTCATTCATTTTAAGGAAAGTAGGAAGGCATAAGTAATTTTAGCTAGT 2160

Qy       2161 TTTTAATAGTGTTCTCTGTATTGTCTATTATTTAGAAATGAACAAGGCAGGAAACAAAAG 2220
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Db       2161 TTTTAATAGTGTTCTCTGTATTGTCTATTATTTAGAAATGAACAAGGCAGGAAACAAAAG 2220

Qy       2221 ATTCCCTTGAAATTTAGATCAAATTAGTAATTTTGTTTTATGCTGCTCCTGATATAACAC 2280
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2221 ATTCCCTTGAAATTTAGATCAAATTAGTAATTTTGTTTTATGCTGCTCCTGATATAACAC 2280

Qy       2281 TTTCCAGCCTATAGCAGAAGCACATTTTCAGACTGCAATATAGAGACTGTGTTCATGTGT 2340
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2281 TTTCCAGCCTATAGCAGAAGCACATTTTCAGACTGCAATATAGAGACTGTGTTCATGTGT 2340

Qy       2341 AAAGACTGAGCAGAACTGAAAAATTACTTATTGGATATTCATTCTTTTCTTTATATTGTC 2400
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Db       2341 AAAGACTGAGCAGAACTGAAAAATTACTTATTGGATATTCATTCTTTTCTTTATATTGTC 2400

Qy       2401 ATTGTCACAACAATTAAATATACTACCAAGTACAGAAATGTGGAAAAAAAAAACCG 2456
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Db       2401 ATTGTCACAACAATTAAATATACTACCAAGTACAGAAATGTGGAAAAAAAAAACCG 2456


RESULT 3
US-10-220-801-11
; Sequence 11, Application US/10220801
; Publication No. US20030125235A1
; GENERAL INFORMATION:
;  APPLICANT: FOXWELL, Brian Maurice John
;  TITLE OF INVENTION: TREATMENT OF DISEASES ASSOCIATED WITH CYTOKINE PRODUCTION WITH
;  TITLE OF INVENTION:  INHIBITORS OF THE TEC FAMILY OF PROTEIN TYROSINE KINASES
;  FILE REFERENCE: 117-412 / N85427B JP
;  CURRENT APPLICATION NUMBER: US/10/220,801
;  CURRENT FILING DATE:  2002-09-05
;  PRIOR APPLICATION NUMBER: PCT/GB01/00949
;  PRIOR FILING DATE: 2001-03-06
;  PRIOR APPLICATION NUMBER: GB 0005345.4
;  PRIOR FILING DATE: 2000-03-06
;  NUMBER OF SEQ ID NOS: 12
;  SOFTWARE: MS Word
; SEQ ID NO 11
;   LENGTH: 2449
;   TYPE: DNA
;   ORGANISM: Homo sapiens
US-10-220-801-11

  Query Match             98.7%;  Score 2424.4;  DB 14;  Length 2449;
  Best Local Similarity   99.7%;  Pred. No. 0;
  Matches 2439;  Conservative    0;  Mismatches    6;  Indels    1;  Gaps    1;

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Qy         61 CTTCTTCTCAAAAGATCACAGCAAAAGAAGAAAATGTCACCAAATAATTACAAAGAACGG 120
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Qy        121 CTTTTTGTTTTGACCAAAACAAACCTTTCCTACTATGAATATGACAAAATGAAAAGGGGC 180
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Qy        181 AGCAGAAAAGGATCCATTGAAATTAAGAAAATCAGATGTGTGGAGAAAGTAAATCTCGAG 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 AGCAGAAAAGGATCCATTGAAATTAAGAAAATCAGATGTGTGGAGAAAGTAAATCTCGAG 240

Qy        241 GAGCAGACGCCTGTAGAGAGACAGTACCCATTTCAGATTGTCTATAAAGATGGGCTTCTC 300
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Qy        361 ATAAGGGGTAACCCCCACCTGCTGGTCAAGTACCATAGTGGGTTCTTCGTGGACGGGAAG 420
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Qy        481 GCTAATCTGCATACTGCAGTCAATGAAGAGAAACACAGAGTTCCCACCTTCCCAGACAGA 540
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Qy        661 AGTACCAGTCTAGCGCAATATGACAGCAACTCAAAGAAAATCTATGGCTCCCAGCCAAAC 720
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Db        841 CACACCACCTCAAAGATTTCATGGGAATTCCCTGAGTCAAGTTCATCTGAAGAAGAGGAA 900
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Qy       2281 TTTCCAGCCTATAGCAGAAGCACATTTTCAGACTGCAATATAGAGACTGTGTTCATGTGT 2340
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Qy       2341 AAAGACTGAGCAGAACTGAAAAATTACTTATTGGATATTCATTCTTTTCTTTATATTGTC 2400
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RESULT 2
HSBMXGENE
LOCUS       HSBMXGENE              2456 bp    mRNA    linear   PRI 22-AUG-1995
DEFINITION  H.sapiens Bmx mRNA for cytoplasmic tyrosine kinase.
ACCESSION   X83107
VERSION     X83107.1  GI:951234
KEYWORDS    cytoplasmic; Tyrosine kinase.
SOURCE      Homo sapiens (human)
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1
  AUTHORS   Tamagnone,L., Lahtinen,I., Mustonen,T., Virtaneva,K., Francis,F.,
            Muscatelli,F., Alitalo,R., Smith,C.I., Larsson,C. and Alitalo,K.
  TITLE     BMX, a novel nonreceptor tyrosine kinase gene of the
            BTK/ITK/TEC/TXK family located in chromosome Xp22.2
  JOURNAL   Oncogene 9 (12), 3683-3688 (1994)
  MEDLINE   95060827
   PUBMED   7970727
REFERENCE   2  (bases 1 to 2456)
  AUTHORS   Tamagnone,L.
  TITLE     Direct Submission
  JOURNAL   Submitted (01-DEC-1994) L. Tamagnone, University of Helsinki,
            Molecular/Cancer Biology Lab., PL21 (Haartmaninkatu 3), 00014
            Helsinki, FINLAND
COMMENT     Related sequence: U08341.
FEATURES             Location/Qualifiers
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                     /db_xref="GI:951235"
                     /db_xref="SWISS-PROT:P51813"
                     /translation="MDTKSILEELLLKRSQQKKKMSPNNYKERLFVLTKTNLSYYEYD
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                     LKALQKEIRGNPHLLVKYHSGFFVDGKFLCCQQSCKAAPGCTLWEAYANLHTAVNEEK
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                     SMSEDEFFQEAQTMMKLSHPKLVKFYGVCSKEYPIYIVTEYISNGCLLNYLRSHGKGL
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BASE COUNT      805 a    495 c    549 g    607 t
ORIGIN
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  Query Match             100.0%;  Score 2456;  DB 9;  Length 2456;
  Best Local Similarity   100.0%;  Pred. No. 0;
  Matches 2456;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

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Db          1 GCAAGCACGGAACAAGCTGAGACGGATGATAATATGGATACAAAATCTATTCTAGAAGAA 60

Qy         61 CTTCTTCTCAAAAGATCACAGCAAAAGAAGAAAATGTCACCAAATAATTACAAAGAACGG 120
Db         61 CTTCTTCTCAAAAGATCACAGCAAAAGAAGAAAATGTCACCAAATAATTACAAAGAACGG 120

Qy        121 CTTTTTGTTTTGACCAAAACAAACCTTTCCTACTATGAATATGACAAAATGAAAAGGGGC 180
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Db        361 ATAAGGGGTAACCCCCACCTGCTGGTCAAGTACCATAGTGGGTTCTTCGTGGACGGGAAG 420

Qy        421 TTCCTGTGTTGCCAGCAGAGCTGTAAAGCAGCCCCAGGATGTACCCTCTGGGAAGCATAT 480
Db        421 TTCCTGTGTTGCCAGCAGAGCTGTAAAGCAGCCCCAGGATGTACCCTCTGGGAAGCATAT 480

Qy        481 GCTAATCTGCATACTGCAGTCAATGAAGAGAAACACAGAGTTCCCACCTTCCCAGACAGA 540
Db        481 GCTAATCTGCATACTGCAGTCAATGAAGAGAAACACAGAGTTCCCACCTTCCCAGACAGA 540

Qy        541 GTGCTGAAGATACCTCGGGCAGTTCCTGTTCTCAAAATGGATGCACCATCTTCAAGTACC 600
Db        541 GTGCTGAAGATACCTCGGGCAGTTCCTGTTCTCAAAATGGATGCACCATCTTCAAGTACC 600

Qy        601 ACTCTAGCCCAATATGACAACGAATCAAAGAAAAACTATGGCTCCCAGCCACCATCTTCA 660
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Qy       2341 AAAGACTGAGCAGAACTGAAAAATTACTTATTGGATATTCATTCTTTTCTTTATATTGTC 2400
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ORIGIN

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Qy         61 CTTCTTCTCAAAAGATCACAGCAAAAGAAGAAAATGTCACCAAATAATTACAAAGAACGG 120
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